

Electric bus

An **electric bus** is a [bus](#) that is propelled using [electric motors](#), as opposed to a conventional [internal combustion engine](#). Electric buses can store the needed [electrical energy](#) on board, or be fed [mains electricity](#) continuously from an external source such as [overhead lines](#). The majority of buses using on-board [energy storage](#) are [battery electric buses](#) (which is what this article mostly deals with), where the electric motor obtains energy from an [onboard battery pack](#), although examples of other storage modes do exist, such as the [gyrobus](#) that uses [flywheel energy storage](#). When electricity is not stored on board, it is supplied by contact with outside power supplies, for example, via a [current collector](#) (like the [overhead conduction poles](#) in [trolleybuses](#)), or with a [ground-level power supply](#), or through [inductive charging](#).



Electric buses in [Bogotá](#)



An electric bus charging in New York, USA.

As of 2017, 99% of all battery electric buses in the world have been deployed in [Mainland China](#), with more than 421,000 buses on the road, which is 17% of [China's](#) total bus fleet.^[1] For comparison, the [United States](#) had 300, and [Europe](#) had 2,250.^[2] By 2021, China's share of electric buses remained at 98% while Europe had reached 8,500 electric buses,^[3] with the largest fleet in Europe being [Moscow](#).^[4]

History



Kühlstein Battery
bus, 1899



Electric Auto Buses on the Plaza
of St. Louis at the 1904 World's
Fair.



Edison electric bus in
1915



A Massachusetts Bay
Transportation
Authority Neoplan USA
trolleybus in Greater
Boston, 2004



A Bee Network branded
Metrolink Manchester
Volvo BZL battery electric
bus in Manchester, 2025

Principles

Battery



A battery electric double decker bus in
Hong Kong

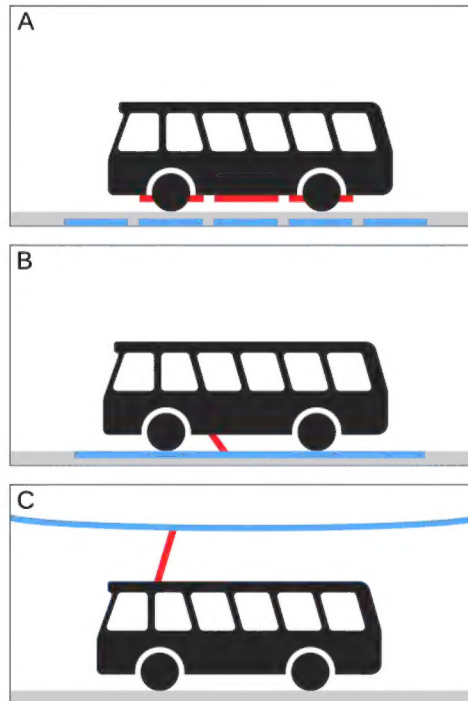
One of the most popular types of electric buses nowadays are [battery electric buses](#). Battery electric buses have the electricity stored on board the vehicle in a battery. As of 2024, battery

electric buses could have a range of over 350 km^[5] with just one charge, although extreme temperatures, hills, driving style and heavy loads can reduce range.^[6]

City driving involves a great deal of accelerating and braking. Due to that, the battery electric bus is superior to diesel bus as it can recharge most of the **kinetic energy** back into batteries during braking, which reduces brake wear. The use of electric over diesel propulsion reduces noise and pollution in cities.^[7]

When operating within a city, it is important to minimize the unloaded and rolling weight of the bus. This can be accomplished by using **aluminium** as the main construction material. Composite paneling and other lightweight materials can also be used. According to **Finnish** bus manufacturer Linkker, its fully aluminium bus construction is about 3000 kg lighter than comparably sized modern **steel** buses, which have a curb weight of 9500 kg. Reducing weight allows for a greater payload and reduces wear to components such as brakes, tires, and joints, achieving cost savings for the operator.^[8]

Charging



Three types of electric road systems. An electric bus (black) receives power from the road: (A) with three [inductive pickups](#) (red) from a strip of resonant inductive coils (blue) embedded several centimeters under the road (gray); (B) with a [current collector](#) (red) sliding over a [ground-level power supply](#) rail segment (blue) flush with the surface of the road (gray); (C) with an overhead current collector (red) sliding against a powered [overhead line](#) (blue)

Commonly, metropolitan electric busses are charged on-route with 6–8 minutes of charging at 450 kW for every hour of operation. Opportunity charging is available at bus stops with overhead chargers utilizing the [SAE J3105](#) standard and at terminals at the end of the bus route. Slower, 50 kW to 175 kW overnight charging at [plug-in chargers](#) is utilized too.^[9] Sometimes wireless charging pads are utilized, but plug-in stations are more common due to the fact that are faster and more efficient.^[10]

Wireless [inductive charging](#) with a charging pad under each [bus stop](#) and at each [stop light](#) was trialed in Korea with the [Online electric vehicle](#) project.^[11] Commercialization of the technology has not been successful, leading to controversy over the continued public funding of the technology in 2019.^[12]

[Sweden](#) conducted a [program studying electric road systems](#) technologies that allow buses and other vehicles to charge while driving on roads and highways. The four tested technologies were [overhead wires](#), in-road rail and on-road rail known as [ground-level power supply](#), and in-road

inductive charging with coils.^{[13][14]} The final report published in December 2024 recommended against a national electric road network in Sweden as it would not be cost-effective, and the project was paused.^{[15][16]} From 2023 to 2027 France will conduct electric road studies with technologies by Alstom,^[17] Electreon, and Elonroad.^[18]

The first solar powered microgrid for charging electric buses in the US is under construction in Montgomery County, MD, and scheduled for completion in fall of 2022.^[19]

Capacitors



City Transport Company "Belgrade"

Buses can use capacitors instead of batteries to store their energy. Ultracapacitors can only store about 5 percent of the energy that lithium-ion batteries hold for the same weight, limiting them to a short distance per charge. However ultracapacitors can charge and discharge much more rapidly than conventional batteries. In vehicles that have to stop frequently and predictably as part of normal operation, energy storage based exclusively on ultracapacitors can be a solution.^[20]

China is experimenting with a new form of electric bus, known as *Capabus*, which runs without continuous overhead lines by using power stored in large on-board electric double-layer capacitors, which are quickly recharged whenever the vehicle stops at any bus stop (under so-called **electric umbrellas**), and fully charged in the terminus.

A few prototypes were being tested in Shanghai in early 2005. In 2006, two commercial bus routes began to use electric double-layer capacitor buses; one of them is route 11 in Shanghai.^[21] In 2009, Sinautec Automobile Technologies,^[22] based in Arlington, VA, and its Chinese partner, Shanghai Aowei Technology Development Company^[23] are testing with 17 forty-one seat Ultracap Buses serving the Greater Shanghai area since 2006 without any major technical problems.^[24] Another 60 buses will be delivered early next year with ultracapacitors that supply 10 watt-hours per kilogram.

The buses have very predictable routes and need to stop regularly, every 5 kilometres (3 mi), allowing opportunities for quick recharging. The trick is to turn some bus stops along the route into charging stations. At these stations, a collector on the top of the bus rises and touches an

overhead charging line. Within a couple of minutes, the ultracapacitor banks stored under the bus seats are fully charged. The buses can also capture energy from braking, and the company says that recharging stations can be equipped with [solar panels](#). A third generation of the product, will give 32 kilometres (20 mi) of range per charge or better. ^[20] Such a bus was delivered by Chariot Motors in Sofia, [Bulgaria](#) in May 2014 for 9 months' test. It covers 23 km in 2 charges. ^[25]

Sinautec estimates that one of its buses has one-tenth the energy cost of a diesel bus and can achieve lifetime fuel savings of \$200,000. Also, the buses use 40 percent less electricity compared to an electric [trolley bus](#), mainly because they are lighter and have the [regenerative braking](#) benefits. The ultracapacitors are made of [activated carbon](#), and have an [energy density](#) of six watt-hours per kilogram (for comparison, a high-performance lithium-ion battery can achieve 200 watt-hours per kilogram), but the ultracapacitor bus is also cheaper than [lithium-ion](#) battery buses, about 40 percent less expensive, with a far superior reliability rating. ^{[20][24]}

There is also a [plug-in hybrid](#) version, which also uses ultracapacitors.

Sinautec is in discussions with [MIT](#)'s Schindall about developing ultracapacitors of higher energy density using vertically aligned [carbon nanotube](#) structures that give the devices more surface area for holding a charge. So far, they are able to get twice the energy density of an existing ultracapacitor, but they are trying to get about five times. This would create an ultracapacitor with one-quarter of the [energy density](#) of a lithium-ion battery. ^[26]

Drawbacks

As with other [electric vehicles](#), climate control and extremely cold weather will weaken the performance of electric buses. In addition, terrain may pose a challenge to the adoption of electric vehicles that carry stored energy compared to trolleybuses, which draw power from overhead lines. Also, compared to trolleybuses, battery electric buses have lower passenger capacity because the weight of the batteries increases axle loads in jurisdictions where there are legal axle load limits on roads. Even when conditions are favorable, internal combustion engine buses are frequently diesel powered, and diesel is relatively inexpensive per mile. High local utility rates (especially during periods of peak demand) and proprietary charging systems pose barriers to adoption. ^[27]

In Motion Charging

Battery electric trolleybuses with In Motion Charging (IMC) technology electric buses that can charge dynamically via an overhead contact network and can run on batteries for up to half of their route. ^[28] The on-board battery is charged while the vehicle is in motion under the overhead

wires and then allows off-wire travel for significant distances, often in excess of 15 km.^[29] The electric transition is not inexpensive but by using high efficiency systems, like light or heavy rail, the electrical drive can be cost-effective, sustainable and, in the end, a given no-brainer solution.^[30]

Makers and models

School use

North America



A battery electric [Proterra](#) BE35 bus operated by [San Joaquin RTD](#) beside its fixed charging station



[Bay Shore, New York](#), brand new all-electric Blue Bird school buses.

In 2014, the first production-model all-electric school bus was delivered^[31] to the [Kings Canyon Unified School District](#) in California's San Joaquin Valley. The Class-A school bus was built by [Trans Tech Bus](#), using an electric powertrain control system developed by [Motiv Power Systems](#), of Foster City, California. The bus was one of four the district ordered. The first round of SST-e buses (as they are called) is partly funded by the AB 118 Air Quality Improvement Program administered by the [California Air Resources Board](#).

The Trans Tech/Motiv vehicle has passed all KCUSD and California Highway Patrol inspections and certifications. Although some diesel hybrids are in use, this is the first modern electric

school bus approved for student transportation by any state.



The first all-electric school bus in the state of California pausing outside the California capitol building in Sacramento.

Since 2015, the Canadian manufacturer [Lion Bus](#) offers a full size school bus, [eLion](#), with a body made out of composites. It is a regular production version that is built and shipped in volume since early 2016, with around 50 units sold until 2017.^[32]

In February 2021, there were about 300 electric schoolbuses in operation in the United States. That month, [Montgomery County, Maryland](#) approved a contract to transition its 1,400 vehicle schoolbus fleet to electric buses by 2035, with the first 25 buses arriving in fall 2021.^[33]

The 2021 [Infrastructure Investment and Jobs Act](#) included \$2.5 billion in funding for electric school buses, to be distributed over five years.^[34]

By June 2022, 38 US states were using electric schoolbuses.^[35]

In September 2022, [EPA](#) funding for electric schoolbuses was doubled, from \$500 million to almost \$1 billion, due to high demand. The improvement in air quality over diesel powered school buses is expected to be helpful for children with asthma.^[36] In addition, the BIDIRECTIONAL Act was introduced in the US Senate, to "create a program dedicated to deploying electric school buses with bidirectional [vehicle-to-grid](#) (V2G) flow capability."

List of electric buses

Transit authorities that use battery buses or other types of all-electric buses, other than [trolleybuses](#):

Africa

Egypt

- [Alexandria](#)^[37]
- [Cairo](#):
 - [Cairo Transportation Authority](#) – 170 buses^[38]

- Mowasalat Misr^[39]
- Cairo Bus Rapid Transit^[40]

- Sharm El Sheikh^[41]

Kenya

- Nairobi: BasiGo electric buses from BYD^[42]

Morocco

- Marrakesh: BRT Marrakesh – eBRT (electric bus rapid transit as trolleybuses)^[43]

Rwanda

- Kigali: BasiGo same company as Kenya electric buses from BYD

South Africa

- Cape Town: Golden Arrow Bus Services - 120 electric buses of BYD^[44]

Asia

China



BYD K8A,K9FE,C9,C8,K6,T8SA,T3 in Bengbu, Anhui, China



Beijing's electric bus fleet in service during the 2008 Olympics

As of 2016, 156,000 buses are being put into service per year in China.^[45] As of the end of 2020, 378,700 electric buses were in operation, accounting for 53.8% of the total amount of buses.^[46]

- Beijing
- Bengbu^[47]
- Changsha (BYD x 180 vehicles)^[48]
- Haikou (BYD)^[49]

- [Lhasa](#), First solar powered public bus in 2015^[50]
- [Shanghai](#) (capabuses)
- [Shaoguan](#) (BYD)^[51]
- [Shenzhen](#) (BYD x 16,359 vehicles). As of 1 January 2018, every bus in Shenzhen is battery-electric.^[52]
- [Tianjin](#) (BYD)^[53]
- [Xi'an](#) (BYD)^[54]
- [Yancheng](#)^[55]
- [Bengbu](#) (BYD x 638 vehicles)^[56]

Indonesia



A [BYD SJM-240012](#) electric bus operated by [Transjakarta](#) in [Jakarta](#)

- [Transjakarta](#) plans to replace aging fleet with newer electric powered buses. Available candidates are locally made MAB buses and imported [BYD](#) buses. Technical trials started by September 2019.^[57] In June 2022 TransJakarta order 3 brand electric buses, which is [SAG](#), [Zhongtong](#), and [Skywell](#).^[58]
- [Paiton Energy](#) took delivery of the first locally produced electric bus made by PT MAB.^[59]
- [INKA](#) electric bus is used by BRT to [Trans Metro Pasundan](#) in [Bandung](#) and [Trans Semanggi Surobaya](#) in [Surabaya](#).^{[60][61]}

India



An electric bus in [Hyderabad](#), India

Highlights:

- On 6 March 2014, India's first intra-city e-bus was launched in Bengaluru.^[62]
- On 17 October 2016, [Ashok Leyland](#) unveiled India's first indigenous e-bus.^{[63][64]}
- On 8 August 2019, [Government of India](#) sanctioned 5,595 e-buses to 64 cities and state transport undertakings.^{[65][66]}
- On 5 September 2019, India's first inter-city e-bus service, from Mumbai to Pune, was launched.^[67]

Cities using electric buses include:

- [Ahmedabad, Gujarat](#)^[68]
- [Bangalore, Karnataka](#)^[69]
- [Bhubaneswar, Odisha](#)
- [Chandigarh](#)^[70]
- [Delhi NCR](#)^[71]
- [Hyderabad Metropolitan Region](#)^[72]
- [Mumbai Metropolitan Region](#)^[73]
- [Pune, Maharashtra](#)^[74]
- [Nagpur, Maharashtra](#)^[75]
- [Kolkata, West Bengal](#)^[76]
- [Patna, Bihar](#)^{[77][78]}
- [Rajgir, Bihar](#)^{[77][78]}

Iran

- Iran's first electric bus was launched in Tehran in 2021 with the brand name of SHETAB. It is the vehicle designed with PLM technology in Iran.^{[79][80][81]}

Israel

- Israel has more than 100 electric buses, out of a fleet of ~13,000 buses^[82]
- Dan, a public transport operator in Tel Aviv launched e-bus operation on 15 September 2016 with five Chariot ultracapacitor e-buses on Route 4. After 2017, Dan put other four Chariot e-buses with 32kWh ultracapacitors into service. In late 2018 and 2020 it put 19 and 10 new ultracapacitor e-buses with 40 kWh ultracapacitors into service. By late 2020, 37 Chariot electric buses operated in Tel Aviv.

Japan



Community Bus "Hamurun"

- Community Bus "Hamurun" (Operated by [Nishi Tokyo Bus](#)) in [Hamura, Tokyo](#) since 10 March 2012^[83]
- Community Bus "Sumida Hyakkei" (Operated by [Keisei Bus](#)) in [Sumida, Tokyo](#) since 20 March 2012^[84]
- [Kitakyushu City, Japan](#).^[85]

Malaysia

- [Bandar Sunway](#)
- [Kuala Lumpur](#)
- [Putrajaya](#)^{[86][87]}
- [Melaka City](#)^[88]
- [Selangor](#)^[89]
- [Kota Kinabalu](#) (coming soon 2018)^[90]
- [Kota Bharu](#) (coming soon 2018)^[91]
- [Kuching](#) (on trial since 1 March 2019)^[92]

Qatar

741 electric buses are operated by Mowasalat (Karwa) the country's public transit system.^[93]

Singapore



A Yutong E12DD electric bus operated by
[Tower Transit Singapore](#)

- Singapore's first fully electric bus was launched in 2016 on a trial basis by [Go-Ahead Singapore](#).
- On 24 October 2018, the [Land Transport Authority](#) procured 60 fully electric buses – 20 [BYD K9](#) buses, 20 [ST Engineering-Linkker LM312 Electric Buses](#), 10 [Yutong E12](#) single-decker buses and 10 Yutong E12DD double-decker buses, for \$50.64 million total.
- On 17 October 2019, [SMRT Buses](#) began deploying BYD C6 electric minibuses on bus service 825, marking the launch of Singapore's first fully electric public minibuses.
- On 3 April 2020, [Go-Ahead Singapore](#), [Tower Transit Singapore](#) and [SMRT Buses](#) began deploying Yutong E12 electric buses, marking the start of the rollout of the 60 fully electric buses procured by the [Land Transport Authority](#).
- On 29 July 2020, [SBS Transit](#) began deploying [BYD K9 Gemilang](#)-bodied electric buses. EV chargers based at the Seletar Bus Depot (SEDEP).
- On 27 October 2020, Go-Ahead Singapore, Tower Transit Singapore and SMRT Buses began deploying Yutong E12DD electric double-decker buses, marking the launch of Singapore's first production batch of electric double-decker buses.
- On 25 August 2021, SBS Transit and SMRT Buses began deploying Linkker LM312 electric buses, marking the launch of Singapore's first Opportunity Rail Charging Electric buses.^[94]
- In 2025, these BYD and Zhongtong three-door buses have new low-floor design, 2 handicapped seats, and a rear emergency exit hatch window. the first production batch of Zhongtong LCK6126EVG N12 units was total 120 vehicles, acquired by [SBS Transit](#) and [SMRT Buses](#). All buses begin deployment revenue service debuts. EV chargers were deployed locates an Sengkang West, Gali Batu and East Coast Integrated Bus Depots. latest the next tender of 660 three-door electric buses were procured by Land Transport Authority. we also have newer ones that are second production batch of electric double-decker buses. Both 360 single-deckers and 300 double-deckers are the tender contract award closed on 22 May 2025.

South Korea



Seoul's "Peanut Bus" at Mt. Namsan.

- [Seoul](#) has 15 electric buses nicknamed "Peanut Bus" for their shape, transferring people from subway stations in downtown to the [N Seoul Tower](#), circulating Mt. [Namsan](#).^[95]
- Seoul's [Gangnam District](#) will have 11 electric buses in operation from February 2013 and 270 electric buses by the end of 2013, increasing to 400 buses by 2014.^[96] At least 3,500 electric buses will be introduced in phases until 2020, which will account for half of Seoul's bus fleet.^[97]
- [Gumi](#) will have the world's first wireless electric bus, known as [Online Electric Vehicle](#), in operation from July 2013 developed by [KAIST](#). Electricity is wirelessly fed into the bus from the tracks.^{[11][98]}
- [Pohang](#) will have automatically battery switching electric buses in operation from July 2013. Unlike conventional plug-in charging buses, the battery pack is automatically swapped with a fully charged one before complete drainage.^[99]

Thailand



An electric bus in [Bangkok](#), Thailand

- Thai Smile Bus Co., Ltd.^[100]

Turkey

- [Anadolu Isuzu](#)
- [BMC](#)
- [Bozankaya](#)
- [Karsan](#)
- [Otokar](#)

- [Temsas](#)

UAE

The UAE has recently introduced electric buses. These are public buses which serve Dubai.^[101]

Vietnam



VinBus in [Hanoi](#), Vietnam

- [VinBus](#) made by [VinFast](#) of [Vingroup](#)

Europe

Belarus



Belarusian electrobus E-433 on test in Moscow

- E433 «Vitovt Max Electro» (Minsk)^[102]
- E420
- E321

Belgium

The electrification of Belgium's buses is on a strong upward trend:

[Brussels](#)

- At the end of 2019 STIB/MIVB operated 800 buses, of which 184 (23%) of them were hybrids. Tenders for 50–100 electric buses are being prepared and the hydrogen option is also being examined.

As for fully electric buses, Belgium only had 4 in operation in 2019.^[103]

Flanders

- At the end of 2019 De Lijn operated 2,295 buses, of which 368 were hybrids. De Lijn introduced its first six fully electric buses in 2020, with seven more to follow. An order for 970 electric buses, which had been cancelled, is to be reissued.^[104] The Flemish coalition agreement states that city centres must be operated emission-free by 2025 and that all buses in Flanders must be zero-emission by 2035.^[105]

Wallonia

- At the end of 2019, OTW operated 1,769 of its own buses, of which 309 were hybrids.

Bulgaria

- Since 2018 [Sofia](#) operates a fleet of 20 [Yutong](#) battery electric buses
- Since 2020 [Sofia](#) operates a fleet of 15 Chariot-[Higer](#) supercapacitor-based electric buses. In 2021 the fleet was supplemented by 30 more electric vehicles of this type.
- Since February 2021 [Kazanlak](#) operates a fleet of 7 Alfabus battery electric buses
- Since February 2021 [Gabrovo](#) operates a fleet of 3 Chariot-[Higer](#) supercapacitor-based electric buses, delivered by [Chariot Motors \(https://chariot-electricbus.com/\)](https://chariot-electricbus.com/) .
- Since July 2021 [Ruse](#) operates a fleet of 20 [SOR](#) battery electric buses.

Finland

- [Helsinki Regional Transport Authority](#) – 436 electric buses (34% of the total)^[106]

France

- [RATP](#) (Paris): Line 341 is the first line of 100% electric full-size [Bluebuses](#).^[107]

Germany

- [Berlin](#): Berlin public transport(Berliner Verkehrsbetriebe (BVG)) operator orders 90 new electric buses. It is still unclear which manufacturer the vehicles were ordered from. As the local German newspaper, the Tagesspiegel writes, the order is said to have gone to the Dutch electric bus and charging infrastructure manufacturer Ebusco. The delivery of all buses is scheduled for the end of 2022. This will increase BVG's fleet to 228 electric buses.^[108]
- [Munich](#): The Dutch electric bus manufacturer Ebusco has received a follow-up order from public transport operator Stadtwerke München in Germany. The order is for 14 electric 18-metre buses of the type Ebusco 2.2. Delivery is scheduled for the first half of 2023. "After the 12-metre buses from Ebusco met the range expectation, we are looking forward to taking its big brother on the road," says Veit Bodenschatz, managing director and Head of Bus Operations at Münchner Verkehrsgesellschaft (MVG). In Munich, the aforementioned twelve Ebusco 2.2 are already in use as solo buses in the 12-metre version, as well as two Ebusco 3.0, which, as reported, were recently handed over to Stadtwerke.^[109]

- **Konstanz:** Stadtwerke Konstanz has purchased six new electric buses as a prelude to the long-term conversion of its bus fleet. The new Mercedes eCitaro e-buses have already been delivered and are scheduled to enter service on lines 6 and 14 in February. The municipal utility had already announced in October 2020 that it intended to purchase six e-buses in 2021 and to stop buying diesel buses in the future. The order was then placed with Mercedes-Benz last year, and the red-painted eCitaro buses have since arrived in Constance.^[110]

Italy

- **Azienda Trasporti Bergamo** – **Bergamo**^[111]
- **Gruppo Torinese Trasporti** – **Turin**, uses small capacitor vehicles on two routes ("Star1" and "Star2") through city center since early 2000.
- **Azienda Trasporti Milanesi**, the company responsible for public transportation in **Milan**, has ordered 250 electric buses in 2019, and plans to be fully electrified by 2030. As of 2019, there are 25 electric buses, 100 hybrid buses and 3 hydrogen buses in operation in the city.^[112]

Lithuania

- Municipal public transport company **Klaipėdos autobusų parkas**, **Klaipėda**, started using locally produced **Dancer electric buses** on Route 8 in April 2020.^[113]
- Municipal public transport company **Kauno autobusai**, **Kaunas**, operates electric trolleybuses since 1965. As of April 2020, the company operated around 100 **Solaris Trollino 12AC** and several **Berkhof Premier AT18** trolleybuses on a network of 17 lines.
- Municipal public transport company **Tauragės autobusų parkas**, **Tauragė** in March 2019 announced the acquisition of electric **Iveco Rosero 70C18** and **Solaris Urbino Electric** buses. A total of 5 electric buses were launched on three suburban routes in early 2020.
- Municipal public transport company **Susisiekimo paslaugos**, **Vilnius**, began using four **Karsan Jest Electric** buses on Route 89 in September 2019, making this route fully electric. This is an addition to the network of 19 routes, operated with 279 electric trolleybuses, mostly **Solaris Trollino 15AC**, **Solaris Trollino IV 12**, **Škoda 14Tr**, **Škoda 14TrM**, **Škoda 15Tr** and **Amber Vilnis 12 AC**, as of April 2020. Vilnius trolleybus network was launched in 1956.

Netherlands



A VDL Citea Electric charging at the [bus station](#) of [West-Terschelling](#), Netherlands

The Netherlands has the most electric buses of any European country. At the end of 2019 the number had reached 770, or 15% of the entire Dutch fleet of 5,236 buses. This is expected to grow to 1,388 by the end of 2020. In the provinces of [Groningen](#) and [Drenthe](#) 47% of buses are electric, in [Limburg](#) 37% and in [North Holland](#) 31%. The main manufacturers are [VDL](#) (486 of the existing 770) [Ebusco](#) (110), [Heuliez](#) (49) and [BYD](#) (44).^[114] In 2015, the Dutch public transport authorities agreed to buy only emission-free buses from 2025 onwards, and to make the entire fleet emission-free by 2030.^[115]

[Amsterdam](#)

In December 2018 [GVB](#) ordered 31 electric buses from VDL, with an option for 69 more buses. They entered service on 2 April 2020 on routes 15, 22 and 36, and are

- 9 Citeas SLF-120 Electric, with 216 kWh batteries
- 22 articulated Citeas SLFA-180 Electric, with 288 kWh batteries

The buses recharge through a pantograph from 31 8 MW Heliox fast chargers at the Garage West depot on Jan Tooropstraat and seven 45 kW chargers at [Sloterdijk station](#).^{[115][116]} EBS ([Egged Bus Systems](#)), which primarily serves Waterland to the north of Amsterdam, has also ordered 10 electric buses from VDL.^[116]

[Arnhem](#)

Arnhem has [the Netherlands's only trolleybus network](#), which opened in 1949 and operates 46 articulated buses on six routes.

[Eindhoven](#)

On 11 December 2016 Hermes introduced 43 fully electric VDL 18-metre buses in Eindhoven, driving a daily distance of 400 km each. In 2017 this was the biggest all-electric bus operation of Europe.

Haaglanden

For use on its Haaglanden network EBS is using 116 electric buses:

- 23 VDL Citea LLE 99 Electrics for Zoetermeer and Delft (10-metre [32 ft 9³/₄ in])
- 93 Mercedes-Benz Citaro NGT Hybrids for other routes (83 12-metre [39 ft 4¹/₂ in] and 10 18-metre [59 ft 5⁵/₈ in] articulated)^[117]

Rotterdam

In 2018 Rotterdam ordered 55 electric buses from VDL^[116] and in 2019 obtained a [European Investment Bank](#) loan to buy a further 105 electric and 103 hybrids.^[118]

Schiphol

Since March 2018, 100 VDL Citea articulated electric buses operated by [Connexxion](#) have served [Schiphol airport](#). The buses have a battery capacity of 170 kWh and a range of 80 kilometres. They are charged during the day by Heliox 450 kW fast chargers, taking between 15 and 25 minutes. Overnight, 30 kW slow charges take 4–5 hours.^[119] They are powered by [100% renewable energy](#), from wind power and solar panels at the depots.^[120] The buses serve two different networks:

- [R-net](#): routes 242, 342, 347 and 347 with a total length of 78 km
- [Schipholnet](#): routes 180, 181, 185, 186, 187, 190, 191, 194, 195, 198, 199 and 287.

Since 2016 a fleet of 35 BYD 12-metre battery buses has provided airfield services.^[121]

Utrecht

In Utrecht, [Qbuzz](#) has operated electric buses since 2017.

Wadden Islands

In April 2013 six all-electric BYD buses operated on the island of [Schiermonnikoog](#). Arriva started running 16 electric buses on Vlieland, Ameland and Schiermonnikoog.

Poland



[Autosan Sancity 12LFE](#) in [Częstochowa](#)

- **Kraków:** In January 2016, first 2 [Solaris Urbino 12 electric](#) buses were delivered by [Solaris Bus & Coach](#). In September 2016, further 4 [Solaris Urbino 8,9 LE electric](#) buses were delivered by the same manufacturer. A roadside charger was installed at a bus stop on Pawia street.
- **Warsaw:** In June 2015, Solaris Bus & Coach delivered 10 Solaris Urbino 12 electric buses. They are running on route 222. A further 20 electric buses are on order, first 10, manufactured by [Ursus Bus](#), due to be delivered in summer of 2017 and further 10 Solaris Urbino 12 electrics by end of March 2018. There are also plans to purchase further 130 electric buses by 2020. 19 termini will be equipped with chargers, allowing buses to be topped-up using roof-mounted pantographs.^{[122][123][124]}
- **Zielona Góra:** In October 2017 MZK Zielona Góra order 47 electric buses [Ursus City Smile 12E](#) manufactured by [Ursus Bus](#).^[125]
- **Stalowa Wola:** In September 2017 ZMKS Stalowa Wola order 10 electric buses [Solaris Urbino 8,9 LE electric](#) manufactured by [Solaris Bus & Coach](#).^[126]

As of 2022, around 700 electric buses—not counting [trolleybuses](#)—from different manufacturers are operated in Poland, and there are plans to obtain another few hundred. The largest fleets are located in [Warsaw](#) (162 buses), [Kraków](#) (78 buses), [Poznań](#) (59 buses), [Jaworzno](#) (44 buses) and [Zielona Góra](#) (43 buses).^[127] Trolleybuses operate in [Gdynia](#), [Lublin](#) and [Tychy](#), with around 250–300 in service.

Portugal

[Porto:](#)

- STCP purchased 15 CaetanoBus e.CityGold in 2018, followed by 5 Zhongtong N12 (LCK6126EVB-2) in 2021, and 48 more of the same model in 2023, which they started service in 2024. The Caetano can be found in service on many bus lines from the Francos depot during rush hour times, due to low autonomy (rarely can be seen during service throughout the day, depending on the battery usage), the 5 2021 Zhongtong are uncommon on some services during the day, also from the Francos depot, and the 48 from 2023 can be seen regularly on many bus lines from the Via Norte depot, and these versions are equipped with camera mirrors, top view driving control, and were the first ones to be equipped with a new SAE system for STCP, which later applied onto the remaining bus fleet.
 - This bus company will receive 8 Zhongtong minibuses, plus 20 buses under a collaboration between CaetanoBus and CRRC, to enter service during the year of 2025. It is also planned for purchase 22 electric double-decker buses for 2028.
- Vianorbus, a bus group in service for the first area lot Unir, with the help from Viação Alvorada (bus company in service for Carris Metropolitana in Lisbon) provided many of their Zhongtong N12 for their regular bus service for Maia.

- NEX Continental/Alsa Porto, in service for the second area lot for Unir, has two second hand Irizar i2e buses, formerly buses from TMB Barcelona, in service, plus some Yutong ICE12 and E9-A (ZK6890B EVG). These buses are provided for the company by Auto Viação Feirense.
- Auto Viação Feirense, in service for the fourth area lot for Unir, has a fre Yutong ICE12 for intercity service, and dozens of the E9-A midibuses

Lisbon:

- CCFL Carris purchased in 2019 15 of their CaetanoBus e.CityGold for their fleet renovation. 20 more entered service gradually since 2023, along with 15 Karsan e-Jest.
- For Carris Metropolitana, many bus companies for their area lots purchased two batches of Zhongtong N12 and CaetanoBus e.CityGold for their regular service. Alsa Todi Metropolitana de Lisboa (Alsa/NEX Continental Setúbal), provided by Auto Viação Feirense, has a variety of Yutong electric buses in service, such as the E12LF, U12, ICE12 and E9-A. In 2020, before Scotturb became Viação Alvorada with Vimeca Transportes, has a CaetanoBus e.CityGold on their fleet, numbered 300.

Guimarães:

- Guimabus, bus company belonging to Vale do Ave, have 21 Irizar iebus and 5 Karsan Jest Electric.

Romania

- **Cluj-Napoca:** In May 2018, [Solaris Bus & Coach](#) delivered 11 Solaris Urbino 12 electric buses to the local operator CTP Cluj, Cluj-Napoca becoming the first city in [Romania](#) to use [battery-electric buses](#) in public transport. (Electric buses in the form of [trolleybuses](#) were already in use in Cluj and several other Romanian cities.) Another 19 buses are expected to be delivered in the future. The municipality's mayor, [Emil Boc](#), announced that Cluj will have a fully electric public transport system by 2025.^[128]
- **Braşov:** In 2019 -2021, SOR delivered 60 electric buses ENS12 and EBN8 to Brasov. Also in 2022, Karsan delivered 12 articulated buses type E-ATA18.
- **Iaşi:** Solaris delivered in 2022 20 Solaris Urbino 12 Electric.
- **Slatina:** Operates since 2022 a fleet of 8 SOR ENS 12 and 10 Karsan E-ATA 10.
- **Craiova:** Operates since 2020, 20 Solaris Urbino 18 electric buses.
- **Turda:** Operates since late 2019 a fleet of 20 SOR electric buses, 10 SOR EBN 11 and 10 SOR EBN 9.5.
- **Alba Iulia:** Operates 13 SOR ENS 12 electric buses since 2023.
- **Ploieşti:** Operates 9 SOR ENS 12 since 2023.
- **Suceava:** Operates both 15 Solaris Urbino 12 Electric and 25 ZTE City Roamer.

- [Zalău](#): Operates 10 SOR ENS 12 and 10 SOR EBN 9.5 since 2020.
- [Pitești](#): Operates 40 Solaris Urbino 12 Electric.
- [Drobeta-Turnu Severin](#): is operating 6 SOR EBN 11 electric and 3 ZTE GRANTON.
- [Constanța](#): Operates 20 BYD K9U electric buses.
- [Bistrița](#): Operates 10 SOR EBN 9.5 electric buses.
- [Buzău](#): Operates 4 Temsa Avenue Electron 12 and 9 BYD K9U Electric Buses.
- [Arad](#): Operates 10 Temsa electric buses, 5 Temsa Avenue Electron 12 and 5 Temsa MD9 LE.
- [Sibiu](#): Operates 5 Karsan Jest Minibuses and 9 Solaris Urbino 12 Electric.
- [Mangalia](#): Operates 10 Karsan E-ATAK 8.5 meters.
- [Focșani](#): is operating 7 Karsan Jest Electric and 9 Karsan E-ATAK.
- [Timișoara](#): Operates 40 Karsan E-ATA 18.
- [Rovinari](#): Operates 3 SOR EBN8.
- [Segarcea](#): Operates 3 Karsan E-ATAK.
- [Galați](#): will operate 20 Solaris Urbino 12 and 20 Solaris Urbino 9.5.

In Romania, except for the cities above, are operating more than 350 electric buses all over Romania, and their number is expanding. Most of the electric buses in Romania are delivered by: Solaris (Poland), SOR (Czech Republic), Karsan (Turkey), Temsa (Turkey), BYD (China), ZTE Bus in cooperation with BMC Trucks and Bus (Romania). The list above is incomplete, as more tenders for electric buses are being launched, and more buses and models continue to appear.

Russia



A Russian electric bus [KamAZ-6282](#) on route in [Moscow](#).



[LiAZ-6274](#) is another common model in [Moscow electric bus fleet](#).

- In 2014 battery-powered trolleybuses started operating in [Chelyabinsk](#). The remodeled vehicles can run up to 30 km on routes that lack wires.^[129]
- In 2018 electric buses were introduced in [Moscow](#). The city government has signed contracts with [GAZ](#) and [Kamaz](#) automobile companies to supply the city with 200 fast-charging electric buses. After 2021, only electric vehicles are to be purchased.^[130] With the purchase of the 100th electric bus in May 2019, Moscow became the city with Europe's largest electric bus fleet. As of March 2022, over 1000 electric buses are in operation in Moscow.^[131] Drive Electro company had provided batteries for 400 out of those 600 electric busses.^{[132][133][134]}
- Russian based Electric bus manufactures are [LiAZ](#) (GAZ Group), [Trolza](#) (PC Transport Systems) and [Kamaz](#).^{[135][136]}

Serbia

- In 2016 [GSP Belgrade](#), the public transport operator of city of [Belgrade](#), launched dedicated electric bus line equipped exclusively with 5 electric buses, delivered by Chariot Motors.^[137] The line has a total length of 7.9 kilometres one-way and 13 bus stops.
- In 2022, the Belgrade public transport operator GSP Beograd put its 10 new Chariot e-buses into commercial operation, delivered by Chariot Motors and DAT holding.

Spain

- [Málaga](#): [Malaga Transport Company SAM](#) (EMT), S.A.M^[138]
- [Madrid](#): [Empresa Municipal de Transportes de Madrid](#) 20 all-electric and 20 hybrid [diesel-electric](#) buses^[139] and since February 2017 one Iziar ie2.
- [Figueres](#): Councillor for the Environment^[140]
- [León](#): [Minibus Tecnobus](#) Gulliver in [El Ejido](#)^{[141][142]}
- [Seville](#)^[141]

Sweden

- [Västtrafik](#): is running 10 electric [Volvo](#) buses in Gothenburg on route 55^[143]
- [VL](#): is running a fleet of electric [Solaris](#) buses in [Västerås](#) on route 1 to 7^[144]

Switzerland



ABB TOSA Energy Transfer System

- transport public genève (tpg) introduce [TOSA Flash Mobility, Clean City, Smart Bus](#)^[145] a new system of mass transport with electric "flash" recharging of the buses at selected bus stops.^[146]

United Kingdom



A BYD Enviro400EV in the United Kingdom

- [Birmingham](#): Since July 2020, [National Express West Midlands](#) has been operating 19 fully electric ADL/BYD double deckers on the 6 route from Birmingham to Solihull, via Hall Green and Shirley
- [Bristol](#): Route 72 from City Centre to Frenchay UWE campus^[147]
- [Coventry](#): Since August 2020, [National Express Coventry](#) has been operating 10 fully electric ADL/BYD double deckers on the 9/9A route between University Hospital and Finham, via Coventry rail station and Coventry Pool Meadow bus station.^[148]
- [Durham](#): Cathedral and City Centre loop^{[149][150]}
- [Glasgow](#): [Strathclyde Partnership for Transport](#) runs battery-powered electric buses on one route in Glasgow, between George Square and the Transport Museum.^[151]
- [Greater Manchester](#): [Stagecoach](#) plans to buy 105 electric buses for use in the Greater Manchester area by 2020.^[152]
- [Guildford](#): Introduced a fleet of electric buses on its Park and Ride services on 7 January 2019.^[153]
- [Inverness](#): Stagecoach North Scotland operates 5 Optare solo EVs.^[154]
- [Leicester](#): [First Leicester](#) and Leicester [Arriva Midlands](#) operate [Wright StreetDeck Electroliner](#) BEVs and [Wright GB Kite Electroliner](#) BEVs and [Yutong E12](#) and [Yutong E15](#) BEVs.
- [London](#): As of August 2023, 1000 zero-emission buses operate in London, the [2nd largest fleet in Europe](#).^{[155][156]}
- [Milton Keynes](#): Route 7^[157]
- [Newcastle upon Tyne](#): [Go North East](#) started operation of [Yutong](#) E10s under the *Voltra* brand name on routes 53 and 54 in June 2021.

- **Norwich:** Since November 2023, [First Eastern Counties](#) operates 60 [Wright StreetDeck Electroliner](#) BEVs and 15 [Wright GB Kite Electroliner](#) BEVs^[158]
- **Nottingham:** [CT4N](#) operate a fleet of electric Optare Solos, Versas and [BYD K9UR](#) buses on contract services for [Nottingham City Council](#)

North America

Aruba

- **Oranjestad:** (BYD)^[159]

Canada



St. Albert in Canada's oil producing province of [Alberta](#).

British Columbia

- [Vancouver electric buses](#) have been in operation since 1948; [TransLink](#) operates 260 of them.
- [Victoria](#) – CVS Tours currently deploys North America's first all-electric double decker bus made by [GreenPower Motor Company](#).^[160]

Ontario

- [Toronto](#) (Proterra, [New Flyer](#), BYD)^[161]
- [Windsor](#) (BYD)^[162]

Québec

- [Réseau de transport de la Capitale](#), [Quebec City's](#) public transit authority, has integrated 8 electric buses to its fleet in 2008 to serve the [Old City](#).^[163] The Tecnobus Gulliver buses can carry up to 20 passengers and run on \$3.25 worth of electricity per day.^[164]
- [Société de transport de Montréal](#), [Montreal](#), bus fleet going all-electric or hybrid by 2029.^[165]
2017 – Cité-Mobilité project : 7 electric buses on line 36 with high-speed charging.^[166]

United States



Spokane Transit City Line at charging station

In November 2019, orders for new electric buses had outpaced manufacturing capacity.^[167]

The 2021 [Infrastructure Investment and Jobs Act](#) included \$2.5 billion in funding for electric school buses, to be distributed over five years.^[34] By June 2022, there were commitments to 12,275 electric school buses in 38 states.^[168]

A 2022 study by National Grid and Hitachi Energy indicates that installing charging infrastructure for fleet electrification will require location-specific upgrades to the US [electrical grid](#).^{[169][170]}

In 2022, there were 5,269 battery electric buses.^[171]

Cities using electric buses include:

- [Anaheim, California](#)
- [Atlanta, Georgia](#) (at [Emory University](#))
- [Cambridge, Massachusetts](#)
- [Chattanooga, Tennessee](#) – [CARTA](#)^[172]
- [Chicago, Illinois](#)
- [Colorado Springs, Colorado](#)
- [Dallas, Texas](#)^[173]
- [Dayton, Ohio](#)
- [Denver, Colorado](#) – [RDT Free MallRide](#)^[174]
- [Frederick, Maryland](#)
- [Greenville, South Carolina](#)
- [Gulfport, Mississippi](#)^[167]
- [Hampton, Virginia](#)

- Indianapolis, Indiana
- Ithaca, New York
- Lexington, Kentucky
- Los Angeles, California
- Louisville, Kentucky
- Miami Beach, Florida
- Mobile, Alabama
- Nashville, Tennessee
- New Haven, Connecticut
- New York City
- Pomona, California
- Portland, Maine
- Portland, Oregon
- Philadelphia, Pennsylvania
- Providence, Rhode Island
- Reno, Nevada
- Santa Barbara, California
- San Antonio, Texas
- San Diego, California^[175]
- San Francisco, California
- Seattle, Washington
- Seneca, South Carolina
- Spokane, Washington
- Stockton, California
- Tallahassee, Florida
- Worcester, Massachusetts
- Wichita, Kansas

California

Since 2000, the [California Air Resources Board](#) has had a Fleet Rule for Transit Agencies, which requires transit agencies to reduce emissions.^[176] In 2018 it issued the [Innovative Clean Transit rule](#), which requires all new transit buses purchased after 2029 to be zero-emissions buses.^[177]

[Long Beach, California](#) and the [Antelope Valley Transit Authority](#) charge some of their buses on special [wireless](#) charging pads located along bus routes.^[10]

By 2019, more than 200 e-buses were in service in California. Several hundred more e-buses for California were in backlogged orders.^[167]

In 2023, [Oakland, California](#) introduced the first major fleet of electric school buses in a U.S. school district. These buses not only serve as a mode of transportation for students but also contribute 2.1 gigawatt-hours of electricity annually to the [power grid](#), which is sufficient to power between 300 and 400 homes. This initiative holds particular importance in Oakland, a community where many students come from low-income families that are disproportionately affected by industrial pollution. The electric buses are projected to reduce [carbon dioxide emissions](#) by about 25,000 tons each year, thereby improving both the environment and health conditions within the community.^[178]

Total operating cost per mile

[NREL](#) publishes zero-emission bus evaluation results from various commercial operators. NREL published following total operating cost per mile: with [County Connection](#), for June 2017 through May 2018, for an 8-vehicle diesel bus fleet, the total operating cost per mile was \$0.84; for a 4-vehicle electric bus fleet, \$1.11;^[179] with [Long Beach Transit](#), for 2018, for a 10-vehicle electric bus fleet, \$0.85;^[180] and with [Foothill Transit](#), for 2018, for a 12-vehicle electric bus fleet, \$0.84.^{[181][182]}

States without plans for e-buses

In 2019, "only five states, Arkansas, New Hampshire, North Dakota, South Dakota and West Virginia, ... [had] no transit agencies planning to operate electric buses or hydrogen fuel cell buses."^[167]

Oceania

Australia



Interline Bus Services electric bus in Sydney, Australia

Australian Capital Territory

- In September 2017, [Transport Canberra](#) began operating two electric buses based at its Tuggeranong depot.^[183]
- In December 2020, the reelected ALP government announced that it would purchase 90 new electric buses for in 2021 with the aim to have Canberra's entire bus fleet converted to electric by 2024. Upgrades to bus depots would be completed during this time with Woden bus depot being the first to be upgraded.^[184]

New South Wales

- In 2016 [Carbridge](#) procured a fleet of six BYD electric buses to replace its diesel car park shuttles at [Sydney Airport](#).^[185]
- [Transport for NSW](#) began a trial of electric buses on the South Coast before conducting a more expansive trial in region 6 in Sydney in 2019.
- In December 2020, the NSW government announced that it would roll out 120 electric buses across Sydney in 2021. Transport minister [Andrew Constance](#) also announced a goal to transition the entire state's 8,000 strong bus fleet to battery electric by 2030.^[186]
- Sydney, November, 2021: A new rollout of zero emissions buses has begun as part of an ARENA-supported project. The buses will be charged from a solar array installed on the roof of the Leichhardt depot, storing energy in onboard batteries capable of holding up to ten times as much energy as an electric car.^[187]

Queensland

- Brisbane's new [Brisbane Metro](#) rapid bus system will use a fleet of 60 bi-articulated electric buses that visually resemble light rail vehicles. These buses will be supplied by Swiss-based manufacturer [Carrosserie Hess](#).^[188]

- [Kinetic](#) has 11 electric buses on the Sunshine Coast, and 26 total in Cairns and Gold Coast in contracts to Translink Qld

Western Australia

- In July 2020, the [Public Transport Authority](#) announced that it would trial four Volvo electric buses on Perth's Joondalup CAT bus route.^[189]

Victoria

- Melbourne's first fully electric bus began carrying passengers on [Transdev Melbourne](#) route 246 in October 2019. The body construction and fit out for the new bus was carried out in Dandenong by [Volgren](#).^[190]
- In February 2024, [Ventura](#) became the first operator in Melbourne to operate an entirely electric fleet from one of its depots. The depot in Ivanhoe was converted to operate 27 electric buses built by [Volgren](#).^[191]

New Zealand

- In April 2018, [Auckland Transport](#) began a trial with two electric [Alexander Dennis Enviro200](#) buses.^[192] These buses run on the City Link service around Auckland's central business district. The trial continues as of February 2019.
- In July 2018, Tranzurban introduced 10 electric double Decker buses in Wellington. 22 more buses are expected to be in service by 2021. NZ Bus have ordered 67 single Decker buses which will enter service between 2021 and 2023.
- In June 2019, [Red Bus](#) introduced three [Alexander Dennis Enviro200](#) bodied [BYD K9](#) electric buses for use on the 29 Airport route.^{[193][194]}

South America

Argentina

- [Buenos Aires](#) Starting May 2025, 12 units made by Asiastar and imported by [Agrale](#) began covering a 7 kilometer journey between [Lezama Park](#) and the [Retiro railway station](#), operated by the local government.^{[195][196]}



Electric minibus in Buenos Aires

Brazil

- [São Paulo](#) (BYD, Higer, Eletra, MBB)^[197]
- [Campinas](#) (BYD)
- [São José dos Campos](#) (BYD)

Chile

- [Santiago](#) (BYD, Yutong, Foton, King Long, Zhongtong)^[198]
- [Valparaíso](#) (BYD)^[198]
- According to official stats, Santiago has 1580 electric buses, being the city with the biggest electric bus fleet outside of China.^{[199][200][201]}

Colombia

- [Bogotá Transmilenio](#) and the [Sistema Integrado de Transporte de Bogotá](#) with 1485 electric buses, made by BYD and Yutong.^{[202][203][204]}

Uruguay

- [Montevideo](#) (BYD × 200 Vehicles),^[205] (Yutong × 10 vehicles, Higer × 1 vehicle)

In 2013 Abriely imported for Uruguay-Argentina tourist transport operator Buquebus an [BYD K9](#) for a tourist line in [Colonia del Sacramento](#). That line was unsuccessful, and the bus was sold in 2016 to [Montevideo's](#) biggest urban and sub-urban transit bus operator CUTCSA who numbered it ad the 2016 ("outside" the 1-1136 the covered by the 1136 units of the operator). In that service the bus proved that while constrained and limited by the battery capacity in the longer lines, it could easily work in the shorter lines; so in 2020 CUTCSA acquired 20 [BYD K9s](#) for use on three exclusive electrical lines:(CE1 Ciudad Vieja-Tres Cruces, replacing the CA1 line. (CE = "Centrica Electrica"; CA was "Centrica Accesible" or "Accesible Central") It was the first exclusive low floor bus line in [Uruguay](#) and a lower fare,E14 Ciudad Vieja-Pocitas replacing the 14 lines, and,the DE1 Ciudad Vieja-Carrasco line replacing the D1 line. (D=means Differential and refers to it being faster than another pre-existing line)

In 2020 the other three Montevidean bus operators COETC, UCOT and COME bought respectively 4, 3 and 3 Yutong E12LF (also known as ZK6128BEVG) for use in non-exclusive lines (and in COETC and UCOT cases also the CE1)

In the first semester of 2023 CUTCSA started testing a [Higer](#) KLQ6126GEV numbered as 2023:first in the electric exclusive lines, later in multiple lines affiliated to the groupings of lines known as "Linea A", and finally in the "Interdiferencial" lines (Interdiferencial lines composing of both Differential and inter-departmental lines) in preparation for the acquisition of electric units to replace around 25% of the fleet of 1140 buses.

On 7 May 2023 Claudio Techera, a reporter of the magazine "Transporte Carretero"(Road Transport), uploaded to his personal [YouTube](#) channel an interview with Álvaro Gomez,

Director of PRIMATUR, the official importer of [Yutong](#) in Uruguay, in which Gomez confirmed that the cooperative COETC and the company COME S.A. had signed contracts for the acquisition of 10 Yutong U12 buses by each operator, with the possibility of modifying the side windows to make it easier to replace glass broken by stones or bullets. On 11 June, the cooperative UCOT confirmed the purchase of 10 U12 units after a directors' meeting.

- [Canelones-Las Piedras](#) (Ankai × 6). Since 2019 the bus operator Compañía del Este o Codeleste has been buying Ankai electric low-floor buses for use in general lines of different models.
- [Durazno-Durazno Department](#) (Ankai × 2). The bus operator Nossar (which has operated urban and suburban bus services in the department since 1925, and interdepartmental services since 1987) bought 2 Ankai units for urban services, these units arrived at the Montevideo port and were driven about 200 km to Durazno by members of the Nossar family (owners of Nossar since its foundation).

See also



[Buses portal](#)

- [Battery electric bus](#)
- [Battery electric vehicle](#)
- [Capacitor electric vehicle](#)
- [Conductive charging](#)
- [Electric road](#)
- [Electric truck](#)
- [Electric vehicle](#)
- [Electromote](#)
- [Gyrobuss](#)
- [List of buses](#)
- [List of electric bus makers](#)
- [List of bus operating companies](#)
- [Online electric vehicle](#)
- [Public transport](#)
- [Plug-in hybrid](#)

- [Revo Powertrains](#)
- [Solar bus](#)
- [Trolleybus](#)
- [Vehicle Automation: Passenger Shuttles](#)
- [Wrightspeed X1](#)

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Further reading

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82. doi:10.1007/978-3-030-67431-1_5 (https://doi.org/10.1007%2F978-3-030-67431-1_5) .
ISBN 978-3-030-67431-1.

External links

- [New electric buses roll out on Sydney streets \(https://arena.gov.au/blog/new-electric-buses-roll-out-on-sydney-streets/\)](https://arena.gov.au/blog/new-electric-buses-roll-out-on-sydney-streets/)
- [Electric buses \(http://citytransport.info/Electbus.htm\)](http://citytransport.info/Electbus.htm) , Citytransport.
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- [The Electric Tbus Group \(http://www.tbush.org.uk/\)](http://www.tbush.org.uk/)
- [Advanced buses \(https://web.archive.org/web/20100713140934/http://www.transportpolicy.org.uk/PublicTransport/AdvancedBuses/AdvancedBuses.htm\)](https://web.archive.org/web/20100713140934/http://www.transportpolicy.org.uk/PublicTransport/AdvancedBuses/AdvancedBuses.htm)
- [Sustainable Bus \(https://www.sustainable-bus.com/\)](https://www.sustainable-bus.com/)